

**AMENDMENT IN THE NATURE OF A SUBSTITUTE**  
**TO H.R. 250**  
**OFFERED BY MR. EHLERS OF MICHIGAN**

Strike all after the enacting clause and insert the following:

**1 SECTION 1. SHORT TITLE.**

2       This Act may be cited as the “Manufacturing Tech-  
3 nology Competitiveness Act of 2005”.

**4 SEC. 2. INTERAGENCY COMMITTEE AND ADVISORY COM-  
5 MITTEE.**

6       (a) INTERAGENCY COMMITTEE.—

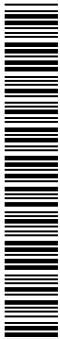
7           (1) ESTABLISHMENT.—The President shall es-  
8 tablish or designate an interagency committee on  
9 manufacturing research and development, which  
10 shall include representatives from the Office of  
11 Science and Technology Policy, the National Insti-  
12 tute of Standards and Technology, the Science and  
13 Technology Directorate of the Department of Home-  
14 land Security, the National Science Foundation, the  
15 Department of Energy, and any other agency that  
16 the President may designate. The Chair of the Inter-  
17 agency Committee shall be designated by the Sec-  
18 retary of Commerce.



1           (2) FUNCTIONS.—The Interagency Committee  
2       shall be responsible for the planning and coordina-  
3       tion of Federal efforts in manufacturing research  
4       and development through—

5           (A) establishing goals and priorities for  
6       manufacturing research and development, in-  
7       cluding the strengthening of United States  
8       manufacturing through the support and coordi-  
9       nation of Federal manufacturing research, de-  
10      velopment, technology transfer, standards, and  
11      technical training;

12          (B) developing, within 6 months after the  
13      date of enactment of this Act, and updating  
14      every 3 years for delivery with the President's  
15      annual budget request to Congress, a strategic  
16      plan, to be transmitted to the Committee on  
17      Science of the House of Representatives and  
18      the Committee on Commerce, Science, and  
19      Transportation of the Senate, for manufac-  
20      turing research and development that includes  
21      an analysis of the research, development, tech-  
22      nology transfer, standards, technical training,  
23      and integration needs of the manufacturing sec-  
24      tor important to ensuring and maintaining  
25      United States competitiveness;



1 (C) proposing an annual coordinated inter-  
2 agency budget for manufacturing research and  
3 development to the Office of Management and  
4 Budget; and

5 (D) developing and transmitting to Con-  
6 gress an annual report on the Federal programs  
7 involved in manufacturing research, develop-  
8 ment, technical training, standards, and inte-  
9 gration, their funding levels, and their impacts  
10 on United States manufacturing competitive-  
11 ness, including the identification and analysis of  
12 the manufacturing research and development  
13 problems that require additional attention, and  
14 recommendations of how Federal programs  
15 should address those problems.

16 (3) RECOMMENDATIONS AND VIEWS.—In car-  
17 rying out its functions under paragraph (2), the  
18 Interagency Committee shall consider the rec-  
19 ommendations of the Advisory Committee and the  
20 views of academic, State, industry, and other entities  
21 involved in manufacturing research and develop-  
22 ment.

23 (b) ADVISORY COMMITTEE.—

24 (1) ESTABLISHMENT.—Not later than 6  
25 months after the date of enactment of this Act, the



1 President shall establish or designate an advisory  
2 committee to provide advice and information to the  
3 Interagency Committee.

4 (2) RECOMMENDATIONS.—The Advisory Com-  
5 mittee shall assist the Interagency Committee by  
6 providing it with recommendations on—

7 (A) the goals and priorities for manufac-  
8 turing research and development;

9 (B) the strategic plan, including proposals  
10 on how to strengthen research and development  
11 to help manufacturing; and

12 (C) other issues it considers appropriate.

13 (3) REPORT.—The Advisory Committee shall  
14 provide an annual report to the Interagency Com-  
15 mittee and the Congress that shall assess—

16 (A) the progress made in implementing the  
17 strategic plan and challenges to this progress;

18 (B) the effectiveness of activities under the  
19 strategic plan in improving United States man-  
20 ufacturing competitiveness;

21 (C) the need to revise the goals and prior-  
22 ities established by the Interagency Committee;  
23 and

24 (D) new and emerging problems and op-  
25 portunities affecting the manufacturing re-



1 search community, research infrastructure, and  
2 the measurement and statistical analysis of  
3 manufacturing that may need to be considered  
4 by the Interagency Committee.

5 (4) FEDERAL ADVISORY COMMITTEE ACT AP-  
6 PPLICATION.—Section 14 of the Federal Advisory  
7 Committee Act shall not apply to the Advisory Com-  
8 mittee.

9 **SEC. 3. COLLABORATIVE MANUFACTURING RESEARCH**  
10 **PILOT GRANTS.**

11 The National Institute of Standards and Technology  
12 Act is amended—

13 (1) by redesignating the first section 32 as sec-  
14 tion 34 and moving it to the end of the Act; and

15 (2) by inserting before the section moved by  
16 paragraph (1) the following new section:

17 **“SEC. 33. COLLABORATIVE MANUFACTURING RESEARCH**  
18 **PILOT GRANTS.**

19 “(a) AUTHORITY.—

20 “(1) ESTABLISHMENT.—The Director shall es-  
21 tablish a pilot program of awards to partnerships  
22 among participants described in paragraph (2) for  
23 the purposes described in paragraph (3). Awards  
24 shall be made on a peer-reviewed, competitive basis.



1           “(2) PARTICIPANTS.—Such partnerships shall  
2       include at least—

3           “(A) 1 manufacturing industry partner;  
4       and

5           “(B) 1 nonindustry partner.

6           “(3) PURPOSE.—The purpose of the program  
7       under this section is to foster cost-shared collabora-  
8       tions among firms, educational institutions, research  
9       institutions, State agencies, and nonprofit organiza-  
10      tions to encourage the development of innovative,  
11      multidisciplinary manufacturing technologies. Part-  
12      nerships receiving awards under this section shall  
13      conduct applied research to develop new manufac-  
14      turing processes, techniques, or materials that would  
15      contribute to improved performance, productivity,  
16      and competitiveness of United States manufacturing,  
17      and build lasting alliances among collaborators.

18          “(b) PROGRAM CONTRIBUTION.—Awards under this  
19      section shall provide for not more than one-third of the  
20      costs of a partnership. Not more than an additional one-  
21      third of such costs may be obtained directly or indirectly  
22      from other Federal sources.

23          “(c) APPLICATIONS.—Applications for awards under  
24      this section shall be submitted in such manner, at such  
25      time, and containing such information as the Director



1 shall require. Such applications shall describe at a  
2 minimum—

3 “(1) how each partner will participate in devel-  
4 oping and carrying out the research agenda of the  
5 partnership;

6 “(2) the research that the grant would fund;  
7 and

8 “(3) how the research to be funded with the  
9 award would contribute to improved performance,  
10 productivity, and competitiveness of the United  
11 States manufacturing industry.

12 “(d) SELECTION CRITERIA.—In selecting applica-  
13 tions for awards under this section, the Director shall con-  
14 sider at a minimum—

15 “(1) the degree to which projects will have a  
16 broad impact on manufacturing;

17 “(2) the novelty and scientific and technical  
18 merit of the proposed projects; and

19 “(3) the demonstrated capabilities of the appli-  
20 cants to successfully carry out the proposed re-  
21 search.

22 “(e) DISTRIBUTION.—In selecting applications under  
23 this section the Director shall ensure, to the extent prac-  
24 ticable, a distribution of overall awards among a variety



1 of manufacturing industry sectors and a range of firm  
2 sizes.

3 “(f) DURATION.—In carrying out this section, the Di-  
4 rector shall run a single pilot competition to solicit and  
5 make awards. Each award shall be for a 3-year period.”.

6 **SEC. 4. MANUFACTURING FELLOWSHIP PROGRAM.**

7 Section 18 of the National Institute of Standards and  
8 Technology Act (15 U.S.C. 278g–1) is amended—

9 (1) by inserting “(a) IN GENERAL.—” before  
10 “The Director is authorized”; and

11 (2) by adding at the end the following new sub-  
12 section:

13 “(b) MANUFACTURING FELLOWSHIP PROGRAM.—

14 “(1) ESTABLISHMENT.—To promote the devel-  
15 opment of a robust research community working at  
16 the leading edge of manufacturing sciences, the Di-  
17 rector shall establish a program to award—

18 “(A) postdoctoral research fellowships at  
19 the Institute for research activities related to  
20 manufacturing sciences; and

21 “(B) senior research fellowships to estab-  
22 lished researchers in industry or at institutions  
23 of higher education who wish to pursue studies  
24 related to the manufacturing sciences at the In-  
25 stitute.

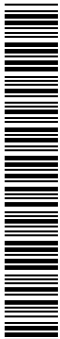


1           “(2) APPLICATIONS.—To be eligible for an  
2           award under this subsection, an individual shall sub-  
3           mit an application to the Director at such time, in  
4           such manner, and containing such information as  
5           the Director may require.

6           “(3) STIPEND LEVELS.—Under this section, the  
7           Director shall provide stipends for postdoctoral re-  
8           search fellowships at a level consistent with the Na-  
9           tional Institute of Standards and Technology  
10          Postdoctoral Research Fellowship Program, and sen-  
11          ior research fellowships at levels consistent with sup-  
12          port for a faculty member in a sabbatical position.”.

13 **SEC. 5. MANUFACTURING EXTENSION.**

14          (a) MANUFACTURING CENTER EVALUATION.—Sec-  
15          tion 25(c)(5) of the National Institute of Standards and  
16          Technology Act (15 U.S.C. 278k(c)(5)) is amended by in-  
17          serting “A Center that has not received a positive evalua-  
18          tion by the evaluation panel shall be notified by the panel  
19          of the deficiencies in its performance and may be placed  
20          on probation for one year, after which time the panel may  
21          reevaluate the Center. If the Center has not addressed the  
22          deficiencies identified by the panel, or shown a significant  
23          improvement in its performance, the Director may conduct  
24          a new competition to select an operator for the Center or



1 may close the Center.” after “sixth year at declining lev-  
2 els.”.

3 (b) MANUFACTURING EXTENSION CENTER COMPETI-  
4 TIVE GRANT PROGRAM.—Section 25 of the National Insti-  
5 tute of Standards and Technology Act (15 U.S.C. 278k)  
6 is amended by adding at the end the following new sub-  
7 sections:

8 “(e) COMPETITIVE GRANT PROGRAM.—

9 “(1) ESTABLISHMENT.—The Director shall es-  
10 tablish, within the Manufacturing Extension Part-  
11 nership program under this section and section 26  
12 of this Act, a program of competitive awards among  
13 participants described in paragraph (2) for the pur-  
14 poses described in paragraph (3).

15 “(2) PARTICIPANTS.—Participants receiving  
16 awards under this subsection shall be the Centers, or  
17 a consortium of such Centers.

18 “(3) PURPOSE.—The purpose of the program  
19 under this subsection is to develop projects to solve  
20 new or emerging manufacturing problems as deter-  
21 mined by the Director, in consultation with the Di-  
22 rector of the Manufacturing Extension Partnership  
23 program, the Manufacturing Extension Partnership  
24 National Advisory Board, and small and medium-  
25 sized manufacturers. One or more themes for the



1 competition may be identified, which may vary from  
2 year to year, depending on the needs of manufactur-  
3 ers and the success of previous competitions. These  
4 themes shall be related to projects associated with  
5 manufacturing extension activities, including supply  
6 chain integration and quality management, or extend  
7 beyond these traditional areas.

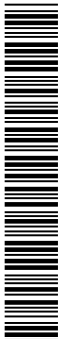
8 “(4) APPLICATIONS.—Applications for awards  
9 under this subsection shall be submitted in such  
10 manner, at such time, and containing such informa-  
11 tion as the Director shall require, in consultation  
12 with the Manufacturing Extension Partnership Na-  
13 tional Advisory Board.

14 “(5) SELECTION.—Awards under this sub-  
15 section shall be peer reviewed and competitively  
16 awarded. The Director shall select proposals to re-  
17 ceive awards—

18 “(A) that utilize innovative or collaborative  
19 approaches to solving the problem described in  
20 the competition;

21 “(B) that will improve the competitiveness  
22 of industries in the region in which the Center  
23 or Centers are located; and

24 “(C) that will contribute to the long-term  
25 economic stability of that region.



1           “(6) PROGRAM CONTRIBUTION.—Recipients of  
2           awards under this subsection shall not be required  
3           to provide a matching contribution.

4           “(f) AUDITS.—A center that receives assistance  
5           under this section shall submit annual audits to the Sec-  
6           retary in accordance with Office of Management and  
7           Budget Circular A–133 and shall make such audits avail-  
8           able to the public on request.”.

9   **SEC. 6. SCIENTIFIC AND TECHNICAL RESEARCH AND SERV-**  
10                           **ICES.**

11           (a) LABORATORY ACTIVITIES.—There are authorized  
12           to be appropriated to the Secretary of Commerce for the  
13           scientific and technical research and services laboratory  
14           activities of the National Institute of Standards and  
15           Technology—

16                   (1) \$426,267,000 for fiscal year 2006, of  
17           which—

18                           (A) \$50,833,000 shall be for Electronics  
19                           and Electrical Engineering;

20                           (B) \$28,023,000 shall be for Manufac-  
21                           turing Engineering;

22                           (C) \$52,433,000 shall be for Chemical  
23                           Science and Technology;

24                           (D) \$46,706,000 shall be for Physics;



1 (E) \$33,500,000 shall be for Material  
2 Science and Engineering;

3 (F) \$24,321,000 shall be for Building and  
4 Fire Research;

5 (G) \$68,423,000 shall be for Computer  
6 Science and Applied Mathematics;

7 (H) \$20,134,000 shall be for Technical As-  
8 sistance;

9 (I) \$48,326,000 shall be for Research Sup-  
10 port Activities;

11 (J) \$29,369,000 shall be for the National  
12 Institute of Standards and Technology Center  
13 for Neutron Research; and

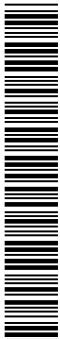
14 (K) \$18,543,000 shall be for the National  
15 Nanomanufacturing and Nanometrology Facil-  
16 ity;

17 (2) \$447,580,000 for fiscal year 2007; and

18 (3) \$456,979,000 for fiscal year 2008.

19 (b) MALCOLM BALDRIGE NATIONAL QUALITY  
20 AWARD PROGRAM.—There are authorized to be appro-  
21 priated to the Secretary of Commerce for the Malcolm  
22 Baldrige National Quality Award program under section  
23 17 of the Stevenson-Wydler Technology Innovation Act of  
24 1980 (15 U.S.C. 3711a)—

25 (1) \$5,654,000 for fiscal year 2006;



1 (2) \$5,795,000 for fiscal year 2007; and

2 (3) \$5,939,000 for fiscal year 2008.

3 (c) CONSTRUCTION AND MAINTENANCE.—There are  
4 authorized to be appropriated to the Secretary of Com-  
5 merce for construction and maintenance of facilities of the  
6 National Institute of Standards and Technology—

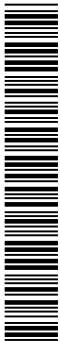
7 (1) \$58,898,000 for fiscal year 2006;

8 (2) \$61,843,000 for fiscal year 2007; and

9 (3) \$63,389,000 for fiscal year 2008.

10 (d) ADVANCED TECHNOLOGY PROGRAM ELIMI-  
11 NATION REPORT.—Not later than 3 months after the date  
12 of enactment of this Act, the Secretary shall provide to  
13 the Congress a report detailing the impacts of the possible  
14 elimination of the Advanced Technology Program on the  
15 laboratory programs at the National Institute of Stand-  
16 ards Technology.

17 (e) LOSS OF FUNDING.—At the time of the Presi-  
18 dent's budget request for fiscal year 2007, the Secretary  
19 shall provide the Congress a report on how the Depart-  
20 ment of Commerce plans to absorb the loss of Advanced  
21 Technology Program funds to the laboratory programs at  
22 the National Institute of Standards and Technology, or  
23 otherwise mitigate the effects of this loss on its programs  
24 and personnel.



1 **SEC. 7. STANDARDS EDUCATION PROGRAM.**

2 (a) PROGRAM AUTHORIZED.—(1) As part of the  
3 Teacher Science and Technology Enhancement Institute  
4 Program, the Director of the National Institute of Stand-  
5 ards and Technology shall carry out a Standards Edu-  
6 cation program to award grants to institutions of higher  
7 education to support efforts by such institutions to develop  
8 curricula on the role of standards in the fields of engineer-  
9 ing, business, science, and economics. The curricula  
10 should address topics such as—

- 11 (A) development of technical standards;
- 12 (B) demonstrating conformity to standards;
- 13 (C) intellectual property and antitrust issues;
- 14 (D) standardization as a key element of busi-  
15 ness strategy;
- 16 (E) survey of organizations that develop stand-  
17 ards;
- 18 (F) the standards life cycle;
- 19 (G) case studies in effective standardization;
- 20 (H) managing standardization activities; and
- 21 (I) managing organizations that develop stand-  
22 ards.

23 (2) Grants shall be awarded under this section on a  
24 competitive, merit-reviewed basis and shall require cost-  
25 sharing from non-Federal sources.



1 (b) SELECTION PROCESS.—(1) An institution of  
2 higher education seeking funding under this section shall  
3 submit an application to the Director at such time, in such  
4 manner, and containing such information as the Director  
5 may require. The application shall include at a  
6 minimum—

7 (A) a description of the content and schedule  
8 for adoption of the proposed curricula in the courses  
9 of study offered by the applicant; and

10 (B) a description of the source and amount of  
11 cost-sharing to be provided.

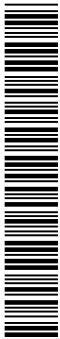
12 (2) In evaluating the applications submitted under  
13 paragraph (1) the Director shall consider, at a  
14 minimum—

15 (A) the level of commitment demonstrated by  
16 the applicant in carrying out and sustaining lasting  
17 curricula changes in accordance with subsection  
18 (a)(1); and

19 (B) the amount of cost-sharing provided.

20 (c) AUTHORIZATION OF APPROPRIATIONS.—There  
21 are authorized to be appropriated to the Secretary of Com-  
22 merce for the Teacher Science and Technology Enhance-  
23 ment Institute program of the National Institute of Stand-  
24 ards and Technology—

25 (1) \$773,000 for fiscal year 2006;



1 (2) \$796,000 for fiscal year 2007; and

2 (3) \$820,000 for fiscal year 2008.

3 **SEC. 8. AUTHORIZATION OF APPROPRIATIONS.**

4 (a) MANUFACTURING EXTENSION PARTNERSHIP  
5 PROGRAM.—There are authorized to be appropriated to  
6 the Secretary of Commerce, or other appropriate Federal  
7 agencies, for the Manufacturing Extension Partnership  
8 program under sections 25 and 26 of the National Insti-  
9 tute of Standards and Technology Act (15 U.S.C. 278k  
10 and 278l)—

11 (1) \$110,000,000 for fiscal year 2006, of which  
12 not more than \$4,000,000 shall be for the competi-  
13 tive grant program under section 25(e) of such Act  
14 (15 U.S.C. 278k(e));

15 (2) \$115,000,000 for fiscal year 2007, of which  
16 not more than \$4,100,000 shall be for the competi-  
17 tive grant program under section 25(e) of such Act  
18 (15 U.S.C. 278k(e)); and

19 (3) \$120,000,000 for fiscal year 2008, of which  
20 not more than \$4,200,000 shall be for the competi-  
21 tive grant program under section 25(e) of such Act  
22 (15 U.S.C. 278k(e)).

23 (b) COLLABORATIVE MANUFACTURING RESEARCH  
24 PILOT GRANTS PROGRAM.—There are authorized to be  
25 appropriated to the Secretary of Commerce for the Col-



1 laborative Manufacturing Research Pilot Grants program  
2 under section 33 of the National Institute of Standards  
3 and Technology Act—

4 (1) \$10,000,000 for fiscal year 2006;

5 (2) \$10,000,000 for fiscal year 2007; and

6 (3) \$10,000,000 for fiscal year 2008.

7 (c) FELLOWSHIPS.—There are authorized to be ap-  
8 propriated to the Secretary of Commerce for Manufac-  
9 turing Fellowships at the National Institute of Standards  
10 and Technology under section 18(b) of the National Insti-  
11 tute of Standards and Technology Act, as added by section  
12 4 of this Act—

13 (1) \$1,500,000 for fiscal year 2006;

14 (2) \$1,750,000 for fiscal year 2007; and

15 (3) \$2,000,000 for fiscal year 2008.

